

USSR

UDC 577:576.851.48+547.963.3

TROITSKIY, N. A., BATURO, V. A., SILKOVA, T. A., and ~~KHILONVICH, E. G.~~

"Use of Phosphorus³² in the Investigation of the Reasons for the Increase in the Number of Recombinants Upon Irradiation of Escherichia coli With Neutrons"

Minsk, Voprosy Genetiki i Seleksii (Aspects of Genetics and Selection),
"Nauka i Tekhnika," Minsk, 1970, p 302

Abstract: Data concerning the utilization of the radioactive phosphorus isotope for the investigation of the recombination process in Escherichia coli irradiated with intermediate neutrons, and also data on the isolation of DNA from radioactive zygotes, are cited. The assumption is advanced that increase in the frequency of recombinants induced by irradiation of the donor has no connection with the increase in the number of formed merozygotes and is probably the result of intensification of the integration process of the donor genotype in the recipient chromosome of Escherichia coli.

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USSR

UDC: 681.325.63

KONDALEV, A. I., Doctor of Technical Sciences, BAGATSKIY, V. A., Engineer,
ROMANOV, V. A., Engineer, KUDLYAK, V. N., Engineer

"Particulars of Designing Information Form Converters Based on Integrated
Circuitry"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp
51-54

Abstract: The development of new kinds of computers has raised the prob-
lem of designing converters for changing the form of information. This
paper discusses some of the difficulties involved in making converters
with an element base which is compatible with state-of-the-art computers.
Particular importance attaches to the problem of adapting integrated cir-
cuit techniques to information form converters. Some examples are given
of developments in this area as regards analog components of information
form converters based on series-produced integrated circuits. On the basis
of these elements, the Institute of Cybernetics of the Ukrainian Academy of

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KONDALEV, A. I. et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp 51-54

Sciences has developed a high-speed analog-digital converter with the following characteristics: dynamic range of input signals 0.1, 1, 10, and 100 v; principal conversion error 0.1%; additional temperature error 0.007%/°C; frequency of readings 1000 kHz; operating time to failure more than 2000 hours.

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Welding

USSR

UDC 621.791.7.011.62-418.3

RUSO, V.I. (Doctor of Techn. Sciences), KUDOVYAROV, B.V. (Candidate of Techn. Sciences), and SUZDALEV, I.V. (Engineer)

"The Process of Fusion in Welding Heavy-Gage Parts"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 71, pp 1-3

Abstract: Production-scale welding of heavy-gage plates and forged pieces in the shipbuilding industry poses problems related to penetration depth and its effect on welding rates. Detailed here are mechanisms of penetration for certain welding techniques. The basic factors involved are: arc pressure, surface tension, weld pool area, and molten metal hydrostatic pressure. An analysis is made of three methods for increasing the arc pressure on the molten metal in the weld crater. The first is based on increasing the mechanical action on the pool and maintaining the area of application constant. An increase in both the arc pressure and penetration depth of 50-100 mm in low-carbon and low-alloy steels may be achieved by raising the welding currents to 5,000-10,000 amp. The method may have limited application due to problems and limitations relative to equipment. The second method calls for reducing the area affected by arc pressure and increasing the depth of fusion without changes in the absolute values of the acting forces. This may be accomplished by the addition of specially formulated fluxes to the weld spot. The third

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RUSSO, V. L., et al., Svarochnoye Proizvodstvo, No 11, Nov 71, pp 1-3

method lies in increasing the power energy concentration on the heating spot, i.e., increasing the intensity of the heat flux in the spot up to values of violent vaporization of the overheated metals. This will increase the arc pressure on the molten metal in the weld crater. It appears that this technique is correlated with the second method since reducing the spot dimensions will actually increase the heat flux intensity. Analysis of these considerations and those from earlier research on this subject indicates that the most effective method of increasing the mechanical action of the arc on the molten metal in the weld crater relative to area and decreasing the surface tension forces is to increase the energy concentration in the heating spot, for example, by compressing the arc. The mechanisms of penetration in both arc and electron beam welding techniques appear to be the same and differ only quantitatively.

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Titanium

USSR

UDC: 621.791.669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOVAROV, E.W. and KSKOZ, S.B. (Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARNAN, Z.M., LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm². VT1 alloy was the filler wire (tensile strength 40-43 kg/mm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the shape of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PUL-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is

$$\frac{\sigma_{m.}}{\sigma_{t.s.}} = \frac{\sigma_{w.m.}}{\sigma_{t.s.}}$$

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UDC 621.791.753.93:621.614.3:669.295

KUDOVYAROV, B. V., Candidate of Technical Sciences, and NIKOLAYEV, A. A.,
POLYAKOV, V. M. and YAVNO, E. I., Engineers

"Semiautomatic Pulse-Arc Welding of Titanium Alloys Using Consumable
Electrode in Inert Gas"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 17-19

Abstract: The authors of this article have developed equipment and technology for semiautomatic pulsed-argon welding of titanium alloys capable of solving problems encountered earlier in this work. The "Impul's-1" device provides for reliable feed of the welding wire and good quality protection of the welding bath. The best results as concerns stability of arc and external formation of welded bead are produced when helium is used as the protective gas. The mechanical properties of the welded seams and joints are equivalent to the properties produced by manual argon-arc welding. The use of the semiautomatic pulsed arc welding device allows the productivity of labor to be increased and the welding deformations to be decreased, mechanizing the welding of structures of titanium and its alloys in all positions.

Nuclear Physics

K

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USSR

ANDREYEV, D. S., GUSINSKIY, G. M., YEROMINA, K. I., MEKHAROV, I. K. H.,
LEMBERG, I. K. H., CHUCUNOV, I. N., Physico-Technical Institute A. I. Lofe,
Academy of Sciences, USSR

"Quadrupole Moment of the Nucleus ^{114}Cd in the First Excited State"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8,
20 Apr 70, pp 369-370

Abstract: In the present work a cyclotron is used for the first time to determine the value of the quadrupole moment (Q_2+) of the first excited state in ^{114}Cd . In order to eliminate the effect of instability of the intensity and energy of accelerated ions on the results of measurements, the experiments employed simultaneous acceleration of the singly charged α particles and the triply charged ions of carbon with energies of 8 and 24 Mev respectively. In this case the value of the Coulomb parameter ξ for both kinds of particles is practically identical and errors originating during comparison are minimal. In separate experiments it was shown that during simultaneous acceleration the ratio of the energies of the light and heavy particles is preserved with a precision not worse than 0.1 percent, and the error of determining Q_2+ connected with this does not exceed 10 percent.

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ANDREYEV, D. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8, 20 Apr 70, pp 369-370

In contrast to other work in which the spectra of γ rays were registered in accordance with ions selected by energy, in the present work the spectra of backward-scattered ions were measured in accordance with γ -quanta selected by energy. The value of Q_2^+ was determined as:

$$Q_2^+ = - (0.53 \pm 0.17) \text{ barn.}$$

This contrasts with three other works in which the value of Q_2^+ lies in the limits - (0.42 + 0.90) barn and a later work in which the value of Q_2^+ is close to zero. 6 ref. Received by editors 10 March 1970.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--QUADRUPOLE MOMENT OF CADMIUM 114 IN THE FIRST EXCITED STATE -U-
AUTHOR--(05)-ANDREYEV, D.S., GUSINSKIY, G.M., YEROKHINA, K.I., KUDDYAROV,
M.E., LEMBERG, I.KH.
COUNTRY OF INFO--USSR
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(8), 369-70
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--EXCITED STATE, CADMIUM ISOTOPE, CYCLOTRON, QUADRUPOLE MOMENT,
CHARGED PARTICLE, ALPHA PARTICLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0515 STEP NO--UR/0386/70/011/008/0369/0370
CIRC ACCESSION NO--AP0137604
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137604

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUADRUPOLE MOMENT Q_{SUB2} POSITIVE) OF $PRIME114$ CD WAS DETD. IN A CYCLOTRON BY USING THE SIMULTANEOUS ACCELERATION OF SINGLY CHARGED 8-MEV ALPHA PARTICLES AND TRIPLY CHARGED 24 MEV C IONS; Q_{SUB2} POSITIVE EQUALS MINUS (0.53 PLUS OR MINUS 0.17) B. FACILITY: FIZ.-TEKH. INST. IM. LOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--A SEP 70
TITLE--EFFECT OF THE CONFIGURATION OF THE CONTACT SURFACE OF THE LARGE
BELL ON THE OPERATION OF A BLAST FURNACE -U-
AUTHOR--KUDDOYAROV, M.S., ZHIGULEV, P.G., POLYANSKIY, D.S., KORNEV, V.B.,
GORBACHEV, V.P.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(1), 12-15
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, METALLURGIC FURNACE, COMPONENT LIFE EXPECTANCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0142

STEP NO--UR/0133/70/030/001/0012/0015

CIRC ACCESSION NO--AP0103821

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103821

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHORTENED LIFE OF LARGE BELLS CAUSED BY EXCESSIVE LEAKAGE WHEN THE TOP PRESSURE IS SIMILAR TO 1 ATM SUGGESTED REPLACING THE CONICAL CONTACT SURFACE OF A 53DEGREES LARGE BELL WITH A SPHERICAL ONE. THE POSSIBILITY WAS INVESTIGATED ON A 1:25 SCALE TRANSPARENT FURNACE TOP MODEL, AND NEW BELLS WERE INSTALLED ON 2 FURNACES. THEIR PERFORMANCE IS DESCRIBED. A SPHERICAL CONTACT SURFACE LEADS TO A TIGHTER JOINT AND THEREFORE TO A LONGER LIFE. RENDERS THE CHARGE TRAJECTORY STEEPER, LOWERING ITS IMPACT POINT ON THE THROAT ARMOR BY 300-320 MM, AND TENDS TO INCREASE THE PERIPHERAL GAS STREAM.

UNCLASSIFIED

USSR

UDC 911.3.61.001.8

MARTYNOVA, Z. I., and KUDOYAROVA, I. Ya.

"A Survey of the Use of Maps in Studying Parasitic Diseases. An addition to the Development of Medical Cartography"

V sb. Vopr. Med. Parazitol. (Problems in Medical Parasitology -- collection of works), Moscow, 1970, pp 182-192 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.9)

Translation: An analysis is presented of nosogeographical maps designed and used for the study of the geography of parasitic disease. Approximately 400 such maps of the text and atlas type, all charted by USSR parasitologists, were studied. One of the first maps was one showing the distribution of malaria in Finland for 1830-1832. The Russian and Soviet contribution to this field has been great; particularly distinguished pioneers are N. Toropov, V. Stoletov, and A. Leontovich. A formulation is given for the significance of cartography as a research method in the geography of disease. A subject classification of these maps is suggested. Eight map groups are characterized: 1) survey maps of disease areas without consideration of their inner structure; 2) maps of disease area structures; 3) maps of disease vectors; 4) maps of the seasonal prevalence of medical phenomena; 5) historical

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USSR

MARTYNOVA, Z. I., and KUDOVAROVA, I. Ya., V sb. Vopr. Med. Parazitol. (Problems in Medical Parasitology -- collection of works) Moscow, 1970, pp 182-192 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.9)

nosogeographical maps; 6) maps showing planning of counter-measures against infection; 7) nosoprognostic maps; 8) district division maps. A total of 393 nosogeographic maps are classified according to content form of illustration and disease. It was found that the nosoprognostic maps were most prevalent (176); the most frequent method of chart illustration was flagging (181) and nosological spectrum (107); and the most frequent map content was malaria distribution (163). A critical analysis was made of representational methods to convey medical information on maps. For purposes of research and practice, the most valuable maps are those showing the relation between disease and the environment in a way that facilitates prognosis about the future development of epidemics in similar territories. The pressing problems in medical mapping were defined as: the construction of a series of maps on the structure of disease areas for basic parasitic illnesses, and extending the subject matter of complex medico-geographic maps in geographical atlases. It would be useful to include medico-geographic maps in

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USSR

MARTYNOVA, Z. I., and KUDOVYAROVA, I. Ya., V sb. Vopr. Med. Parazitol.
(Problems in Medical Parasitology — collection of works), Moscow, 1970,
pp 182-192 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract
No 1.36.9)

regional atlases as well as epidemiological division of districts, as these
are constructs of medico-geographical assessment of the territory.

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USSR

UDC 621.357.7:669.225'73

KUDRA, O. K., IZBEKOVA, O. V., GAYEVSKAYA, L. V.

"Study of Electrolytic Separation of Silver-Cadmium Alloy"

Vestn. Kiev. Politekhn. In-ta. ser. Khim. Mashinostr. i Tekhnol [Herald of Kiev Polytechnical Institute, Chemical Machine Building and Technology Series], No 8, 1971, pp 52-54 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L327 by Z. A. Solov'yeva).

Translation: Cathode polarization and the composition of Ag-Cd alloys from a trilonate electrolyte are studied. It is demonstrated that the precipitation of the alloy begins after attainment of $D_{(lim)}$ with respect to Ag. As D is increased, the content of Cd in the alloy increases. Following attainment of the second $D_{(lim)}$ (for Cd), the composition of the alloy is stabilized and becomes independent of D . Mixing increases both $D_{(lim)}$, increases the content of Ag in the alloy and increases the permissible value of D . The yield per current of alloy increases with increasing D , particularly without agitation. As the content of Ag in the alloy increases, the hardness of the sediment passes through a maximum at 30-35% Ag. The intermediate resistance of the alloy is ~ 0.03 ohm with various Ag contents, which is near that of pure electrolytic silver. To produce an alloy containing 30-40% Ag, an elec-
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USSR

UDC 621.357.7:669.225'73

KUDRA, O. K., IZBEKOVA, O. V., GAYEVSKAYA, L. V., Vestn. Kiev. Politekhn.
Inta. ser. Khim. Mashinostr. i Tekhnol, No 8, 1971, pp 52-54.

trolyte is recommended containing (mol/l) AgNO_3 0.035, CdSO_4 0.165, trilon
B 0.3, pH 8-9 (adjusted by KOH), D 1-1.25 a/dm² without agitation or
7-8 a/dm² with intensive agitation.

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1/2 020 UNCLASSIFIED PROCESSING DATE--23 OCT 70
TITLE--EFFECT OF TEMPERATURE ON THE RATE OF LEAD DISCHARGE FROM TRILONATE
ELECTROLYTES IN THE PRESENCE OF VARIOUS ANIONS -U-
AUTHOR-(03)-GALINKER, V.S., KUDRA, O.K., NOVIKOVA, L.S.
COUNTRY OF INFO--USSR
SOURCE--UKR. KHIM. ZH. 1970, 36(2), 150-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRODEPOSITION, LEAD, ELECTROLYTE, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1935 STEP NO--UR/0073/70/036/002/0150/0154
CIRC ACCESSION NO--AP0118897

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118897

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEVIATION FROM STRAIGHT LINES IN THE CURRENT RECIPROCAL TEMP. GRAPHS (LOG I VS. 1-T) FOR THE RATE OF ELECTRODEPOSITION OF PB PRIME2 POSITIVE FROM PB-TRILON B COMPLEX CONTG. ELECTROLYTES IN THE PRESENCE OF DAC PRIME MINUS AND HALIDE IONS IS ATTRIBUTED TO THE BALANCE BETWEEN 2 EFFECTS, THE INCREASE IN ELECTRODE REACTION RATE EXPECTED AT HIGHER TEMP. DUE TO INCREASED RATE OF DIFFUSION AND INCREASED NO. OF IONS ABLE TO PENETRATE THE ENERGY BARRIER AND THE CHANGES IN THE NATURE OF THE ELECTRODE SURFACE WITH INCREASED TEMP. (CHANGE IN THE CONC. OF ADSORBED IONS). FOR SOLNS. CONTG. DAC PRIME MINUS, AT A P.O. OF 350 MV THERE IS A MAX. AT SIMILAR TO 45DEGREES. FOR THOSE CONTG. C1 PRIME MINUS THERE IS A MIN. AT 55DEGREES IN THE CURRENT RECIPROCAL TEMP. GRAPHS. THERE IS A BREAK IN THE VISCOSITY RECIPROCAL TEMP. GRAPHS AT SIMILAR TO 55DEGREES, BUT COND. DOES NOT CORRELATE WELL WITH VISCOSITY AT LOW CONCNS. OF PB PRIME2 POSITIVE. FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

USSR

KUDRATOV, A. K., Tashkent Institute of the Textile and Light Industries

"Development of a Filter to Eliminate Toxic Chemicals From the Atmosphere of Airtight Tractor Cabs"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 11, 1978, pp 29-30

Abstract: The Tashkent Institute of the Textile and Light Industries designed an airtight cab for tractors with a ventilation system and adsorbing device to prevent dangerous exposure of the drivers to agricultural chemicals. Polluted air from the aerosol chamber of the tractor is drawn through a tube to a multi-layer filter-adsorbent (cloth, activated charcoal, etc.) which removes the toxic chemicals and dust. Tests showed the device to be highly effective. During 30 hours of operation the filter reduced for example, the content of the pesticide methylmercaptophos in air from the aerosol chamber to 0.001 to 0.004 mg/m³, or appreciably below the maximum permissible level (0.1 mg/m³) in the air next to the driver.

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Ion Exchange

USSR

UDC 661.183

KUDRAVSKIY, YU. P., and KAZANTSEV, YE. I., Ural' Polytechnical Institute
imeni S. M. Kirov, Chair of the Metallurgy of Rare Metals

"The Effect of Temperature on the Sorption of Indium Ions Hydrolyzed by the
Cation Exchange Resin KU-2X8"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 16, No 9, 1973, pp 1363-
1365

Abstract: The behavior of hydrolyzed indium ions on the KU-2X8 cation exchange resin has been studied at 18-20, 50 and 80°. It has been shown that during the sorption process, as a result of additional hydrolysis of indium ions in the resin phase, the composition of the hydroxy complexes absorbed by the cation exchange resin becomes increasingly more complex. It has been established that a temperature increase results in a more complete hydrolysis of the ions in the resin phase, accompanied by higher sorption levels and lower extraction of the metal ions by ammonium nitrate solution. The sorption of indium at 80°C is accompanied by the formation of hydroxide precipitates and basic salts of indium in the intergranular space, a phenomenon not observed in absence of resin.

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USSR

UDC: None

KUDREVATOVA, O. V.

"Multiquantum Molecule Ionization in a Nonorthogonal System of Wave Functions"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, vol 11, No 3, 1972, pp 377-384

Abstract: This paper is the continuation of an earlier paper co-authored by the present writer and published in the journal named above (5, 1970, p 154), which dealt with the problem of the multiquantum ionization of hydrogen-like atoms. Here, it is convenient to expand the desired wave function in a system of nonorthogonal wave functions such that the effect of multiquantum ionization can be described in the first order of perturbation theory. The present paper extends this method to the ionization of molecules in which, as opposed to the ionization of atoms, the dipole moment is averaged over the electron motion in the stationary electron state, depending on the motion of the nuclei. As a result of the interaction of the dipole moment with the electric field of some radiation, a change occurs in the potential energy of the system of charges in the molecule. The author, therefore, considers it necessary to investigate multiquantum molecule ionization as an electronic-oscillatory transition.

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USSR

BUTYLKIN, V. S.; KUDREYATOVA, O. V. (Institute of Radio Engineering and Electronics of the USSR Academy of Sciences)

"Use of a Wave Function for a System of Nonorthogonal Functions and Determining the Contribution of Discrete Levels of a One-Particle System to the Probability of Its Multiquantum Ionization"

Moscow, Teoreticheskaya i Matematicheskaya Fizika; October, 1970; pp 151-8

ABSTRACT: It is proposed that a wave function for a system of nonorthogonal functions be used to describe the process of a multiquantum transition of a material system from the ground state to a continuous spectrum, taking into account its discrete energy levels. Equations for the wave function are derived. The application of perturbation theory to these equations makes it possible to describe, in the first approximation, the motion of the system in the discrete portion of the spectrum independently of its continuous portion. By means of a solution obtained for the discrete levels the authors calculate the probability of a transition of the system to a continuous spectrum. Thus, multiquantum ionization can be described in the first order of perturbation theory.

The article includes 16 equations. There are three references.

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USSR

UDC 539.374

ROYTMAN, A. B., KUDRICHENKO, G. P., and T. A. REZNIXHENKO (Zaperoz'ye)

"Increasing the Corrosion Resistance of Parts Made of Alloys 2Kh15N3M-Sh and 1Kh17N2 by Magnetization"

Kiev, Problemy Prochnosti, No 9, Sep; 73, pp 82-85

Abstract: Results are presented of tests conducted on specimens made of alloy 2Kh15N3M-Sh and blades of the eighth and tenth stages of a gas-turbine compressor, made of steel 1Kh17N2 and preliminarily magnetised, on corrosion resistance and fatigue strength. Magnetization of the specimens and blades was conducted in a magnetic field of 350-400 oersted to the limit value. On the basis of the obtained results, conclusions were drawn concerning the positive influence of magnetization upon the corrosion resistance of the indicated alloys, confirmed by statistical analysis. 3 figures. 5 tables, 3 references.

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USSR

UDC 669.295-145.2

SOROKIN, I. P., BABICH, D. D., KUDRICHENKO, S. A., GLUSHCHENKO, Zh. N., and KOYGUSHSKIY, N. N.

"On the Nature of Chlorine Contained in Electrolytic Titanium"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 72-77

Translation: Data are given on the effect of hydroprocessing conditions and nature of the solvent on the content of deposited chlorine in electrolytic titanium. A description is given of the results of research on the influence of groups of tetravalent titanium, contained in working solutions, on the content of surface and overall chlorine in metal. Statistical data on the content of chlorine in electrolytic titanium are considered. It is demonstrated that deposited chlorine in electrolytic titanium after hydroprocessing of cathode deposits in 1% HCl is not a product of hydrolysis of titanium chlorides. Five tables and two bibliographical entries.

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USSR

UDC: 621.396.677.85

KUDRIN A. A., ZAYTSEV, V. A.

"Quasioptical Properties of a Fresnel Zone Lens in the Microwave Band"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 4 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, Vyp. 4), Leningrad, 1971, pp 171-175 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B63)

Translation: A study is made of the focusing action of a Fresnel lens in the microwave band, and the magnification of the lens is determined. Two illustrations, three tables, bibliography of two titles. Resumé.

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USSR

UDC 591.9:519.24/27

KUDRIN, A. I., Cherepanovo Observation Station for Plant Protection,
Novosibirsk Oblast

"Some Quantitative Parameters in the Analysis of Faunistic Data"

Moscow, Zoologicheskii Zhurnal, No 12, 1971, pp 1861-1864

Abstract: Two quantitative parameters are proposed for use in analyzing faunistic data: (a) frequency of occurrence, i.e., the portion of samples expressed in percentages, and (b) coefficient of infestation, i.e., the product of the frequency of occurrence expressed in fractions of a unit and the average number of objects examined in a sample. For completely inhabited areas, the frequency of occurrence serves as a sampling technique and it is an increasing function of the sample size. For partly inhabited areas, the frequency of occurrence is a spectrum of unfounded estimates of the portion of area inhabited. It is difficult to formulate the general conditions under which the frequency of occurrence can be used. Estimates of the average number of objects per sample determined for a Poisson distribution are essential as a first approximation. Use of the coefficient of infestation for purposes of comparing levels of population density conflicts with the law of large numbers.

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USSR

UDC 591.526

KUDRIN, A. I., Cherepanovskiy Observation Point, Plant Protection Station,
Novosibirskaya Oblast

"An Improved Method of Estimating the Density of a Population by Means of
Exhaustion With Traps"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 9, 1971, pp 1,388-1,399

Abstract: The limitations of Webster's and de Coursey's method of counting the density of a population (for example, the number of insects in a closed room) are discussed, and an improved mathematical equation for the measurements is proposed. The difficulty caused by the uneven distribution of active specimens from one time interval to another can be overcome if the time factor in the equation is replaced by a variable proportional to it, namely the catch of specimens from the inexhaustible supply in the surroundings. The fluctuations in the activity and density of the population due to births and deaths make the exhaustion method unsuitable for determining the total reserve of the specimens, but they are no obstacle to determining the reserve of specimens active in a restricted area. While an influx of specimens into the enclosed area invalidates the count of the reserve of specimens active in that area, it does not invalidate the count 1/2

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USSR

KUDRIN, A. I., Zoologicheskii Zhurnal, Vol 50, No 9, 1971, pp 1,388-1,399

of the total reserve. If the traps located inside and outside the enclosed area are equally effective, the relative rate with which the number of active specimens in the enclosed area is decreasing as a result of exhaustion is the reciprocal of their reserve in that area. This circumstance considerably facilitates the measurement of the reserve of active and inactive specimens in areas which are not completely isolated. In completely isolated areas, the number of counts may be reduced to one.

2/2

USSR

UDC 615.214.31.015.23

DAVYDOVA, O. N., and KUDRIN, A. N., Chair of Pharmacology, Faculty of Pharmacy, 1st Moscow Medical Institute imeni I. M. Sechenov, Moscow

"Search for Antagonists of Lysergic Acid Diethylamide (LSD)"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 1, Jan-Feb 72, pp 24-25

Abstract: After a toxic dose of LSD tartrate (1.5 mg/kg) or LSD base (1 mg/kg) had been administered intravenously to cats, the animals developed psychotic disturbances of behavior (a pronounced defensive reaction and aggressiveness, fear of mice). Intraperitoneal administration of galoperidol in doses of 3-5 mg/kg 30 min before the injection of LSD prevented the disturbances of behavior due to the action of LSD, but produced catatonia. Preliminary intraperitoneal injection of phenytron (beta-N-hexamethyleneimino-m-nitropropionophenone HCl) in doses of 40-60 mg/kg reduced to some extent the symptoms of LSD psychosis, but did not prevent them. Simultaneous preliminary administration to the cats of galoperidol (2-3 mg/kg) and phenytron (30-40 mg/kg) fully prevented the toxic action of LSD as manifested in disturbances of behavior and did not result in the development of catatonia.

1/1

Publications

USSR

KUDRIN, A. N., Professor; VOROB'YEV, Docent (Editors)

Moscow, Aktual'nyye Problemy Farmakologii i Farmatsii. Vsesoyuznaya nauchnaya konferentsiya, posvyashchennaya pamyati M. P. Nikolayeva i V. V. Nikolayev. (Urgent Problems of Pharmacology and Pharmacy. All Union Scientific Conference Dedicated to the Memory of M. P. Nikolayev and V. V. Nikolayev), Ministerstvo Zdravookhraneniya SSSR, 1971, 198 pp

Translation:

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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmat-
sii. Vsesoyuznaya nauchnaya konferentsiya, posvyaschennaya
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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmatsii. Vsesoyuznaya nauchnaya konferentsiya, posvyashchennaya pamyati M. P. Nikolayeva i V. V. Nikolayev, 1971, 196 pp

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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmat-
sii. Vsesoyuznaya nauchnaya konferentsiya, posvyashchennaya
pamyati M. P. Nikolayeva i V. V. Nikolayev, 1971, 198 pp

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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmat-
sii. Vsesoyuznaya nauchnaya konferentsiya, posvyashchennaya
pamyati M. P. Nikolayeva i V. V. Nikolayev, 1971, 196 pp

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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmat-
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pamyati M. P. Nikolayeva i V. V. Nikolayev, 1971, 198 pp

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6/7

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KUDRIN, A. N., et al, Aktual'nyye Problemy Farmakologii i Farmatsii. Vsesoyuznyye nauchnyye konferentsii. 60-ya shkola yu-
pamyati N. P. Nikolayeva i V. V. Nikolayev, 1971, 198 pp

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KRENDAL', F. P., "The Possibility of Study of
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194

7/7

Biochemistry

USSR

UDC 577.1:615.7/9

KUDRIN, A. N., VOROB'YEV, V.G.M.

"Amino Ketones (Experimental and Clinical Studies)"

Meditsina (Medicine), 1970, 327 pp, ill., 1 r. 86 k. (from
Referativnyy Zhurnal - Biologicheskaya Khimiya, No 14, 25 Jul 70,
Abstract No 14 F1937)

Translation: A generalized account of the biological, pharmacological, and clinical work in the study of new, active amino ketone agents is presented in this book. In the amino ketone series were obtained active adrenolytic, spasmolytic, antiangiotensin, antiarrhythmic and neurotropic agents. A classification of amino ketones based on pharmacological principles is proposed. Data are given which show the relationship between the chemical structure and pharmacological and toxicological activity of these materials.

1/1

N. A. Ugolova

1/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ELECTROLYTE COMPOSITION OF THE CEREBROSPINAL FLUID AND CEREBRAL
BLOOD OF RABBITS AFTER EXPOSURE TO ACCELERATIONS -U-

AUTHOR--(02)-KUZOVKOV, A.G., KUDRIN, I.D.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
82-84

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC ACCELERATION EFFECT, BRAIN, BLOOD CHEMISTRY,
CEREBROSPINAL FLUID, HYDROGEN ION CONCENTRATION, SODIUM COMPOUND,
POTASSIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/1971

STEP NO--UR/0453/TQ/004/000/0082/0084

CIRC ACCESSION NO--AP0120614

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETERMINATION OF NA, K AND PH IN THE CEREBROSPINAL FLUID AND CEREBRAL BLOOD OF 16 RABBITS EXPOSED TO A SINGLE SEQUENCE OF 5 30 SEC 5G ACCELERATIONS AT INTERVALS OF 1.5 MIN, OR TO THE SAME ACCELERATION SEQUENCES REPEATED 5 TIMES OVER A PERIOD OF 5-7 DAYS. HIGHER CONTENTS OF K ARE ESTABLISHED IN THESE TISSUES OF EXPERIMENTAL RABBITS EXPOSED TO ACCELERATIONS, ESPECIALLY TO REPEATED ACCELERATION SEQUENCES.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--11 SEP 70
TITLE--ELECTROLYTE COMPOSITION OF CEREBROSPINAL FLUID AND CEREBRAL BLOOD
IN RABBITS AFTER EXPOSURE TO ACCELERATIONS -U-
AUTHOR--KUZOVKOV, A.G., KUDRIN, I.D. K

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1,
JANUARY FEBRUARY 1970, PP 82-84
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACCELERATION STRESS, CEREBROSPINAL FLUID, CENTRAL NERVOUS
SYSTEM, HEMODYNAMICS, HYPOXIA, CEREBRUM, SPACE MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0750

STEP NO--UR/0453/70/004/001/0012/0084

CIRC ACCESSION NO--AP0102715

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102715

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE STUDIES BY G. N. KASSIL' AND YA. A. ROSIN IT CAN BE POSTULATED THAT THIS IS DUE TO THE MAINTENANCE OF AN INCREASED LEVEL OF THE EXCITATION PROCESS OF CEREBRAL NERVE ELEMENTS, WHICH IN TURN IS REFLECTED IN THE ADAPTATION MECHANISM. THESE DATA MAKE IT POSSIBLE TO DRAW THE CONCLUSION THAT IMPAIRMENT IN THE FUNCTIONING OF THE CENTRAL NERVOUS SYSTEM AS A RESULT OF EXPOSURE TO ACCELERATIONS IS ASSOCIATED NOT ONLY WITH AFFERENT INFLUENCES, HOMODYNAMIC SHIFTS AND CEREBRAL HYPOXIA, BUT ALSO WITH CHANGES IN FUNCTIONING OF THE HEMATO ENCEPHALIC BARRIER.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON THE DISSOCIATION CROSS SECTION FOR SLOW COLLIDING EXCITED
MOLECULES -U-
AUTHOR-(03)-DOZOROV, A.A., KUDRIN, L.P., NOVIKOV, V.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 1955-1958
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--EXCITED ELECTRON STATE, MOLECULAR INTERACTION, EXCITATION
CROSS SECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2243 STEP NO--UR/0056/70/058/006/1955/1953
CIRC ACCESSION NO--AP0125821
UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0125821

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CROSS SECTION FOR THE PROCESS
(AB) PLUS M YIELDS A PLUS B PLUS M IS CALCULATED; HERE (AB) AND M ARE
MOLECULES IN THE EXCITED ELECTRON STATES. THE CROSS SECTION CAN BE
EXPRESSED IN TERMS OF WELL KNOWN EFFECTIVE CROSS SECTIONS FOR
PHOTODISSOCIATION OF MOLECULES; AT THERMAL ENERGIES IT IS OF THE ORDER
OF 10^{-14} CM².

UNCLASSIFIED

172 013
UNCLASSIFIED
TITLE--OPTIMUM LIMITS OF THE MELT DOWN CARBON CONTENT --U--
PROCESSING DATE--13NOV70
AUTHOR--(05)--YELANSKIY, G.N., KUDRIN, V.A., MOLOV, V.I., GUTNOV, R.B.,
TUNKOV, V.P.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(2), 123-6
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--OPEN HEARTH FURNACE, METAL MELTING, CARBON STEEL, SULFUR,
PHOSPHORUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1948
STEP NO--UR/0133/70/030/002/0123/0126
CIRC ACCESSION NO--AP0115756
UNCLASSIFIED

272 013 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0115756
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STATISTICAL STUDY, CONFIRMED BY
75 TON EXPTL. OPEN HEARTH HEATS, SHOWED THAT A MELT DOWN C CONTENT
GREATLY DIFFERENT FROM ITS CONTENT OF FINISHED STEEL IS EQUALLY HARMFUL
FOR ALL TECHNOLOGICAL OPERATIONS, BE IT TOO HIGH OR TOO LOW. AN
EXCESSIVE C CONTENT SPECIFIES THE LENGTH OF THE WHOLE BOILING PERIOD,
INCREASES ORE CONSUMPTION AND RAISES TAPPING TEMP. WITHOUT AFFECTING THE
DECARBURIZATION RATE AND S AND P CONTENT OF FINISHED STEEL. FOR
0.10-0.65PERCENT C STEELS, HEATS HAVE TO MELT WITH A C EXCESS OF
0.35-0.65PERCENT ABOVE THE FINAL.

UNCLASSIFIED

USSR

UDC 669.046.5

KUDRIN, V. A., YELANSKIY, G. N., BABICH, V. K., MOTOV, V. I.,
TYURIN, Ye. I., and DANILIN, V. I.

"Technology of Quality Steelmaking in Basic Martin Furnaces Under Contemporary Conditions"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 66-73

Translation of Abstract: Results of investigations on the theoretical development and practical testing of a rational technology for conducting martin steelmaking under contemporary conditions are presented. 6 figures, 23 references.

1/1

- 45 -

USSR

UDC 669.046.5

KUDRIN, V. A., SIDORENKO, M. F., SMIRNOV, N. A., ZUBNEV, A. S., MORZLOV, A. S.,
KHASIN, G. A., CHUVATIN, N. S., and FILATOV, S. K.

"Metal Blowing by Powderlike Materials"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIIS) (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys)
Izd-vo "Metallurgiya," No 61, 1970, pp 183-188

Translation of Abstract: The results of an investigation on dephosphorization
and desulfurization, alloying, and deoxidation of metal by powder-like material
blowing are presented. Data are presented on the effect of basic technological
parameters on the rate and amplitude of the dephosphorization process of steel
by blowing with an oxygen jet containing a powder-like mixture of optimal com-
position, consisting of lime, iron ore, and fluorspar. 4 figures.

1/1

Conferences

USSR

~~KUDRIK, V. A.,~~ and SMIRNOV, N. A., Moscow Evening Metallurgical Institute,
Moscow

"Intensification of Metallurgical Processes by the Blowing in of Materials
in Powder Form"

Moscow, Stal', Vol 31, No 4, Apr 71, pp 379-380

Abstract: A conference on the Intensification of Metallurgical Processes
by the Blowing in of Materials in Powder Form was held in December 1970 at the
Moscow Evening Metallurgical Institute. In reports presented at the conference,
it was pointed out that blowing in of Mg and Mg alloys to improve the quality
of cast iron and pig iron has been introduced at a number of plants. Al is
applied for blowing, because the added cost due to oxidation of Mg by O_2 of
the air is not offset by the use of N_2 , which involves a still greater cost.

Blowing in of graphite powder was found to be of advantage in the open-hearth
process. At the Donetsk Metallurgical Plant, it was established that blowing
of CaO into open-hearth furnaces contributed to the formation of a slag with
a high desulfurizing capacity. The Moscow Evening Metallurgical Institute
and the Zlatoust Metallurgical Plant developed a method of electric steel
1/2

USSR

KUDRIN, V. A. and SMIRNOV, N. A., Stal', Vol 31, No 4, Apr 71, pp 379-380

melting in which a mixture of CaO, iron ore, and fluorspar in the ratio of 7:2:1 is blown in with the O_2 stream during the oxidation period in order to dephosphorize the steel, while a mixture of CaO with 20% fluorspar or 10% fluorspar and 20% chamotte is blown in with Ar during the reduction period. By using NaCl powder, the content of H_2 in steel was reduced by 30-40% and that of non-metallic inclusions by 45%. NaCl, which evaporated from the steel, was more effective in the ladle than in the furnace and produced a higher degree of degasification than that obtained by blowing the steel with Ar. Various types of equipment for blowing in materials in powder form have been developed.

2/2

- 8 -

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--KINETICS OF THE DEPHOSPHORIZING OF STEEL DURING THE INJECTION OF
GAS POWDER MIXTURES -U-
AUTHOR--(03)-SMIRNOV, N.A., SIDORENKO, M.F., KUPRIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (2), 84-91
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL REACTION KINETICS, IRON OXIDE, GAS, METALLURGIC SLAG,
PHOSPHORUS, STEEL PRODUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1451 STEP NO--UR/0370/70/000/002/0084/0091
CIRC ACCESSION NO--AP0130384
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 022

CIRC ACCESSION NO--AP0130384

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE PRESENT STUDY IT IS CONCLUDED THAT CHARACTERISTIC FOR DEPHOSPHORIZATION KINETICS IS A RECTILINEAR CHANGE OF THE P CONTENT IN THE METAL DURING THE INJECTION OF GAS POWDER MIXTS. WITH THE PRESENCE OF AN INCUBATION PERIOD ASSOC. WITH THE GRADUAL PILING UP OF FE OXIDES IN THE SLAG WHILE EMPLOYING NONOXIDIZING COMPNS. OF THE POWDERS. THE DEPHOSPHORIZATION PROCESS OF THE METAL BY THE INJECTION OF GAS POWDER MIXTS. WAS ACHIEVED PRIMARILY AT THE CONTACT SURFACE OF THE METAL WITH THE SLAG PARTICLES. THE LIMITING LINK IN THE ENTIRE DEPHOSPHORIZATION PROCESS IN THE DIFFUSION OF P IN SLAG PARTICLES. THE COMPLETENESS OF THE UTILIZATION OF DEPHOSPHORIZING CAPABILITY OF SLAG PARTICLES, AS CHARACTERIZED BY THE DEGREE OF PERFECTION OF THE DIFFUSION OF P IN THEM, IS, AT THE GIVEN COMPN. OF THE DEPHOSPHORIZING MIXT., DETERM. BY THE POSITION OF THE LIQ. SLAG PARTICLES, DEPENDING ON THE PRESSURE OF THE TRANSPORTING GAS.

UNCLASSIFIED

AA0040748

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UR 0482

1-76

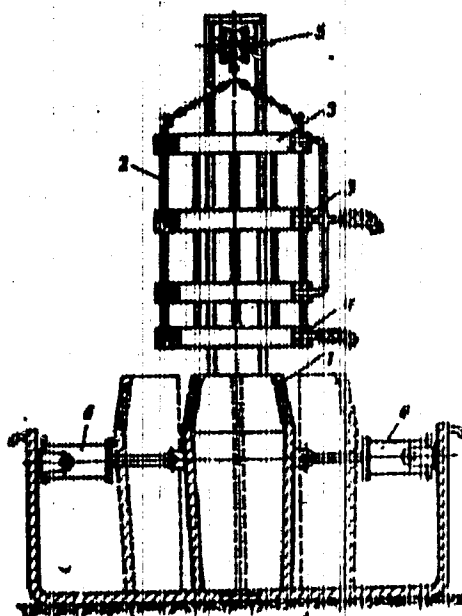
Soviet Inventions Illustrated, Section I Chemical, Derwent,

240198 INGOT SPLIT MOULD (1) encloses the ingot with a frame (2) whose top headers (3) feed a heating medium onto the ingot surface and whose bottom headers (4) feed cooling medium. This frame travels along the ingot by mechanism (5) and (6) removes the mould parts clear of the ingot. Once the skin has formed, the mould is split and the ingot freed and the frame run upwards so as to feed in heating and cooling media as stated. This provides a controlled setting routine for the ingot to give better strength and reduce chemical heterogeneity problems.
23.2.68 as 1220982/22-2. MOSTOVOI, A. B. et al. (18.8.69)
Sul 12/21.3.69. Class 31b². Int. Cl. B 22d.

AUTHORS: Mostovoy, A. B.; Kudrin, V. A.;
Kamenskiy, L. A.; and Vyzodner, L. P.

19750426

AA0040748



19750427

1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SOLUBILITY OF LANTHANUM SULFITE -U-
AUTHOR--(02)-YERMOLAYEV, M.I., KUDRINA, L.T. *K*
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1436-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLUBILITY, SULFITE, LANTHANUM COMPOUND, SODIUM NITRATE,
BUFFER SOLUTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1400 STEP NO--UR/0078/70/015/005/1436/1433
CIRC ACCESSION NO--AP0135074
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135074

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE SOLY. OF LA SUB2 (SO SUB3)
SUB3.4H SUB2 O IN NANO SUB3 SOLNS., IN ACO PRIME NEGATIVE AND IN SUB3
PRIME NEGATIVE BUFFERS, AND IN THE PRESENCE OF SMALL AND LARGE COLONS.
OF NA SUB2 SO SUB3 WERE DETD. AND THE RESULTS ARE PRESENTED GRAPHICALLY.
FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

USSR

UDC 542.91:547.1'118

MUSLINKIN, A. A., NEKLESOVA, I. D., KUDRINA, M. A., YEGOROVA, N. V., IRAIDOVA, I. S., and LOGINOV, V. B., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Synthesis and Some Properties of Acrylic and Methacrylic Derivatives of Chlorophos and Its Analogues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 883-886

Abstract: Reaction of chlorophos and its analogues with acid chlorides of acrylic, methacrylic and α -fluoroacrylic acids gave new products with fungicidal activity: O,O-diphenyl-, O,O-di-n-butyl-, and O,O-dimethyl-(1-acroyloxy-2,2,2-trichloroethyl)phosphonate, di-n-butyl-(1-metacroyloxy-2,2,2-trichloroethyl)phosphonate and O,O-di-n-butyl-(1- α -fluoroacroyloxy-2,2,2-trichloroethyl)phosphonate. Using O,O-di-methyl ether of 1-acetoxy-2,2,2-trichloroethylphosphonic acid as control, it has been established that replacement of the acetyl group by an acroyl or metacroyl radical increases the fungicidal activity and toxicity. Introduction of a chlorine atom onto an alkoxy group has a similar effect. Elongation of an alkoxy chain at the phosphorus atom decreases the toxicity.

1/1

USSR

UDC 542.91.547.1'118

ANEUZOV, B. A., ZORCASTROVA, V. M., NIKITSEVA, I. D., ~~MEZINA, M. A., YEGOROVA,~~
N. V., and tudriy, g. a., Chemistry Institute imeni A. M. Butlerov of Kazan'
State University imeni V. I. Ul'yanov-Lenin and Institute of Organic and
Physical Chemistry imeni A. Ye. Arbuzov of the Academy of Sciences USSR

"Derivatives of Phosphorus Acids and α -Chloroallyl Alcohol. 2. Synthesis
of Mixed α -Chloroallyl Esters of Phosphoric Acid and Some of their Biological
Properties"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72,
pp 1155-1159

Abstract: A previous article by the authors described some phosphorous,
phosphoric, thiophosphoric and phosphinic acid esters containing an α -chloro-
allyl radical. A study of biological properties of the synthesized compounds
showed that they have a selective fungicidal and antimicrobial effect. Low
toxicity and significant activity towards the dermatophytes *Trichophyton*
gypseum and *Epidermophyton Kaufmann-Wolf* were noticeable in mixed phosphoric
acid esters containing one α -chloroallyl radical. Preliminary data showed
that the fungicidal activity of the mixed esters increases with lengthening
of the hydrocarbon radicals at the phosphorus atom, while toxicity declines.
1/2

. USSR

ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1155-1159

The present article gives a more detailed study of the biological effect of this type of compound. The alkyl radical in the series of compounds

$(RO)_2P(O) - OCH_2 - \overset{Cl}{\underset{\text{Cl}}{C}} = CH_2$ was lengthened from C_1 to C_6 . An improvement in the synthesis, viz. conducting the reaction between dialkylphosphoric acid chlorides and α -chloroallyl alcohol in an absolute benzene (instead of ether, as before) and at room temperature, increased the yields considerably. The results indicate that the selectivity of the action of the compounds on the dermatophytes is sharply increased by lengthening the alkyl radical from C_1 to C_6 . Further lengthening of the radical reduces the antifungal activity of the compounds. The top selectivity index is found in di-n-octyl- α -chloroallyl phosphato.

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USSR

UDC 541.69+547.241+591.0146

NEKLESOVA, I. D., KUDRIN, M. A., IRAIDOVA, I. S., KALINULLIN, M. K., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Metabolism of Phosphoric Acid Ester Amides"

Moscow, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

Abstract: A study is described on the selective effectiveness of organophosphorus contact-type insecticides of the DDVP (O,O-dimethyl O-2,2-dichlorovinyl phosphate) group. The in vitro-based data were followed up and confirmed by in vivo experiments. It is shown that O-methyl O-2,2-dichlorovinyl phosphate (II) and O-ethyl O-2,2-dichlorovinyl N-dimethylamidophosphate (III) are highly active insecticides, cholinesterase inhibitors in insects and warm-blooded animals and are aliesterase inhibitors in houseflies. O-2,2-dichlorovinyl N-tetramethyldiamidophosphate (IV) is a relatively weak cholinesterase inhibitor in insects and warm-blooded animals. Compound II exhibits a systemic effect on insects with gnawing mouth parts. The toxicity and anticholinesterase activity of II, III and IV in flies is correlated. As
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USSR

NEKLESOVA, I. D., et al, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

for warm-blooded animals, the correlation was established only for II and III. Despite its low anticholinesterase activity, compound IV appears to be most toxic to white mice. Compound II is detoxified by liver tissue of warm-blooded animals, while IV is activated by them. Compound IV selectively affects the aliesterase of flies but is weakly active relative to the flies per se. This indicates that the insecticide activity of the organophosphorus compounds is not a result of aliesterase inhibition. The experimental data on the toxicity, antiesterase and anticholinesterase activities of the tested compounds are given in tables.

2/2

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USSR

UDC 542.91:661.718.1

NURETDINOV, I. A., NEKLESOVA, I. D., ~~KUDRYNA, M. A.~~, IMAIKOVA, I. S., and
BUINA, N. A., Institute of Organic and Physical Chemistry imeni A. Ye.
Arbuzov, Academy of Sciences USSR

"Synthesis and Properties of Diethylaryl Seleno- and Thiophosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71,
pp 1266-1270

Abstract: The authors undertook to compare some properties of seleno- and thiophosphoric acid derivatives for the purpose of determining the effect of replacement of sulfur atom by selenium atom in the phosphyl group. For this purpose they synthesized a series of diethyl esters of arylthio- and selenophosphoric acids. The initial substances for the synthesis of these compounds were diethylaryl phosphites obtained by the interaction of phenol, 4-chlorophenol, 2,4-dichlorophenol and 2,4,5-trichlorophenol with diethylphosphorous acid diethylamids. The IR and NMR-P31 spectra of the resultant diethylaryl thio- and selenophosphates were studied. A study of the toxicity and insecticidal properties of these compounds showed that esters of selenophosphoric acid are more toxic for warm-blooded animals than their thio analogs and less toxic for insects. Replacement of the sulfur atom by the selenium atom in the phosphyl

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USSR

NUJETDINOV, I. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1266-1270

group leads to systemic action. A correlation is established between the anticholinesterase action of diethylaryl selenophosphates and their toxicity for insects.

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USSR

UDC 8.74

GIRYA, M. G., KUDRINSKIY, V. YU., SERGIYENKO, I. V., STUKALO, A. S.

"Input Language and Processor for Program Controlled Electronic Keyboard Computers"

V sb. Teoriya yazykov i metody postroyeniya sistem programir. (Language Theory and Methods of Constructing Programming Systems---collection of works), Kiev-Alushta, 1972, pp 265-277 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V482)

Translation: The input problem-oriented language PIKM (programming of engineering problems on keyboard computers) and its execution on one of the models of the program controlled keyboard computers (PEKVM) is described. It is noted that with respect to program structure the PIKM language is close to the FORTRAN language. The program in PIKM comprises the basic program and subroutines. The basic program comprises operators and descriptions separated by semicolons or auxiliary words. The descriptions can appear at any point of the program as needed. The set of descriptive media of the PIKM language is oriented toward the keyboard of the PEKVM, that is, each symbol corresponds to one key. The processor is described which executes the operation of the interpreting system. The algorithm of the interpretation system comprises three basic parts: the
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USSR

GIRYA, M. G., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 265-277

algorithm for preliminary processing of the data written in the input language, the algorithm for interpreting the internal language of the program level and the algorithm for the program debugging system. The characteristic of each algorithm is presented. The bibliography has 13 entries.

2/2

Acc. Nr: **AP0040884**

Ref. Code:

UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr / , pp/70-
175

**CANONICAL REPRESENTATION OF RANDOM FUNCTIONS IN PROBLEM
OF PROGNOSIS OF RELIABILITY**

Kudritskiy, V. D.

There is solved the problem of a random process reaching its boundaries under the condition that as a result of checking, its state became known at a certain moment (moments). The random process investigated is represented in the form of a canonical expansion. The results of simulating the system of service utilizing the method of prognosis are stated.

REEL/FRAME
19750623

Food Technology

USSR

UDC 664

MINEYEV, V. A., and KUDROVA, R. V., Candidate of Technical Sciences

"Food Concentrates With Added Highly Nutritious Products"

Moscow, Voenno-Meditsinskiy Zhurnal, No 5, May 71, pp 67-69

Translation: Food concentrates are widely used in the diet of Armed Forces personnel. The great advantage of compressed concentrates is the possibility of providing a high-calorie product of minimal weight and volume, as well as the convenience of its use: division into portions, speed of preparation and distribution. In the development of food concentrates, great emphasis is placed on products which do not require long-lasting technological processing for consumption, i.e., which are ready for use.

Four novel types of food concentrates with a high calorie count (400-460 kcal per 100 g of prepared product) are proposed. The chief product is a prepared commercial biscuit with a moisture content of $22 \pm 2\%$ and a sugar content of at least 35%. The biscuit is dried to a moisture content of 5%, ground to granules of 1.5-2mm diameter, and then mixed with various fillers, such as dry dairy products (acidophilus paste, yogurt with cherry syrup), natural honey, cashew nuts, and caramel syrup. There is an optimum amount of each product added to the concentrate, which results in a concentrate of the required nutritional value, with good taste qualities, and corresponding

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USSR

MINEYEV, V. A., and KUDROVA, R. V., Voenno-Meditsinskiy Zhurnal, No 5, May 71, pp 67-69

consistency. As was found, good taste qualities and an attractive external appearance of the biscuit are obtained when 45% acidophilus paste, 55% yogurt, 20% honey, 25% nuts, and 15% catamel syrup are added. To prevent fat oxidation in concentrates containing dry sour milk products (acidophilus paste, yogurt with cherry syrup), crystalline ascorbic acid is added as antioxidant during storage, in amounts of 200 mg per 100 g of prepared concentrate.

The new food concentrates are prepared in individual portions of 50 g, consisting of small briquettes (5 g and with base dimensions of 20 x 20 mm), which are bitesize use. The prepared portions of the concentrates are packaged in polyethylene-cellophane packs, which are then hermetically sealed with a vacuum-welding machine. The chemical composition and calorie count of the concentrates are shown in the Table.

Product Name	Water	Proteins	Fats	Carbo- hydrates	Ash	Calorie count per 100 g of product, in kcal
plain biscuit	4.0	18.5	12.4	63.7	1.4	452
milk-fruit biscuit	5.1	14.9	14.1	63.9	2.0	454
biscuit with honey	7.9	11.9	6.2	73.2	0.8	407
biscuit with nuts	7.3	13.3	16.6	61.7	1.1	461

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USSR

MINEYEV, V. A., and KUDROVA, R. V., Voenno-Meditsinskiy Zhurnal, No 5, May 71, pp 67-69

Concentrates with dry sour milk products have the highest protein content. They are a source of concentrated, valuable and easily assimilated animal proteins. Introduction of dry sour milk products into the concentrates will make them more valuable and improve the taste qualities, as well as enrich them with essential amino acids, minerals and assimilated carbohydrates and fats. The biscuit containing nuts has a high fat content. Introduction of cashew nuts significantly increases the nutritional value and increases the amount of valuable mineral matter (iron, magnesium, phosphorus, and other elements) in the product. The biscuit containing honey has a high carbohydrate content (above 70%). The honey, which is rich in easily assimilated carbohydrates has the favorable effect of supplying biologically valuable substances, such as vitamins, organic acids, and others.

The presence of easily assimilated matter in the concentrates and the fine grinding of the products during their production enhances their rapid uptake by the body. The biscuit with sour milk products and cashew nuts represents a concentrate of well-balanced composition of the principal nutrients. The percentage composition of proteins, fats, and carbohydrates is 12-16%, 26-33%, and 55-58%, respectively. This corresponds to the physiological requirements established by the Nutrition Institute of the USSR Academy of

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USSR

MINEYEV, V. A., and KUDROVA, R. V., Voenno-Meditsinskiy Zhurnal, No 5, May 71, pp 67-69

Medical Sciences.

The forms of food concentrates discussed above do not require lost time for their preparation, i.e., they are ready for direct consumption. The polyethylene-cellophane film used for packaging the concentrates guarantees compactness, lightness, hermetic sealing, as well as convenience of use. The briquetted products retain their qualities for more than 6 months' storage at a temperature of $22 \pm 3^{\circ}$.

When trial concentrates were given to people in biomedical tests, the taste qualities, satiation factor and convenience of intake were judged positively. Taking into account the good organoleptic values, the high nutritional value, and the stability upon prolonged storage, inclusion of these concentrates in the ration will promote high work productivity on a diet under special conditions.

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USSR

UDC 517.944

KUDRYABTSEVA, I. V., Ufa

"Solutions of a Parabolic Equation, Diminishing with Respect to a Three-Dimensional Variable"

Moscow, Matematicheskiiy Sbornik, Vol 84 (126), No 1, Jan 71, pp 3-13

Abstract: This article examines the equation

$$\frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2},$$

where $u(t, x)$ is the solution in the region $0 \leq t \leq T$. Since it is obvious that such $u(t, x) \equiv 0$ exist that $|u(t, x)| < e^{-Cx^2}$, the question is posed as to how rapidly must the solution, given in the region, diminish before confirmation can be obtained that it is identically equal to zero. The problem is solved in this article for linear parabolic equations of the following type:

$$L(x, D)u(x) = 0.$$

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KUDRYABTSEVA, I. V., Ufa, Matematicheskiy Sbornik, Vol 84(126),
No 1, Jan 71, pp 3-13

Four theorems are given in the article, each of which is discussed in detail, and by solving a rather large number of equations, the author finds a proof for each, ultimately proving the problem as stated initially.

The article lists three bibliographic citations.

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USSR

UDC 621.357.13.669.298

SMIRNOV, M. V., KUDYAKOV, V. YA., POSOKHIN, YU. V., and KRASNOV, YU. H.

"The Equilibrium of Metallic Thorium with Melts of Alkali Metal Chlorides Containing Its Ion"

Tr. In-ta elektrokhimii. Ural'sk. nauch. tsentr AN SSR (Works of the Institute of Electrochemistry. Ural Scientific Center, Academy of Sciences USSR), Vyp 18, 1972, pp 2732 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L343 A. D. Davydov)

Translation: During the measurement of the equilibrium electrode potentials of thorium in the melts of alkali metal chlorides, it was determined that metallic thorium was reduced from Th^{4+} to Th^{2+} . The equilibrium constants K were determined for the reaction $\text{Th}^{4+}_{\text{melt}} + \text{Th}_{\text{solid}} \rightleftharpoons 2\text{Th}^{2+}_{\text{melt}}$ in all

the studied systems. Expressions were determined for the temperature dependence for the apparent standard electrode potentials (UP) of the Th^{4+}/Th and Th^{2+}/Th by the usual method. The relationship of the UP of Th^{2+}/Th and Th^{4+}/Th , K , other electrochemical characteristics to the nature of the salt solution was determined. The empirical equation relating these parameters to the radius of the cation of the salt was also determined.

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USSR

UDC 669.14.018.44:534-8

PON'KIN, YU. F., VOLKOV, B. I., KUDRYAKOVA, I. P., MINTS, I. I.,
and KUZNETSOVA, G. V.

"Effect of Ultrasonic Vibrations on Mechanical Properties and
Fine Structure of 12Kh1MF Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8,
1971, pp 67-68

Abstract: A study was made of the aging of 12Kh1MF steel (0.11% C, 0.20% Si, 0.46% Mn, 1.12% Cr, 0.20% Ni, 0.27% Mo, 0.22% V) under the action of ultrasonic vibrations. Billets were normalized at 980° C and tempered at 740° C. Ultrasound-induced changes in properties were compared with changes in the same properties as a result of thermal aging without stress. A comparison was made of fine structure, short-time mechanical properties, the content of carbide-forming elements (chromium, molybdenum, vanadium) in the anode deposit and the time until failure

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USSR

PON'KIN, YU. F., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1971, pp 67-68

at: $\sigma = 16 \text{ kg/mm}^2$ and 585°C . The results indicate that the processes occurring in 12Kh1MF steel as a result of the action of 20 kHz ultrasonic vibrations correspond to the processes taking place during thermal aging without stress, but that they occur at a much more rapid rate. Ultrasonic vibrations with a certain peak pressure can be used for accelerated long-time strength testing of 12Kh1MF-type steels.

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USSR

USSR
Diagnosis

MIZYAKINA, YE. A., and KUDRYAKOVA, L. V., Chair of Infectious Diseases, Alma-Ata Institute for Advanced Training of Physicians

"Notes on Botulism for the Propagandist"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 8, 1972, p 81

Abstract: Although the clinical aspects of botulism are well known, many general practitioners are not familiar with them and make wrong diagnoses, because they seldom encounter this disease. Recently, however, the occurrence of botulism has increased in Kazakhstan, and almost all cases are caused by consumption of contaminated food of domestic production, mainly mushrooms, vegetables, fish, and ham. For this reason, the case history of 13 persons who consumed home-smoked fish for dinner is given. Nine of them developed botulism: two in the mild form, three in the moderate form, two in the severe form, and two with lethal outcome. The onset of the disease, the initial wrong diagnosis, subsequent hospitalization, clinical manifestations of enteric, neural, and general disorders, and the treatment, including chemotherapy, are described.

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USSR

UDC: 536.24:532.526

KUDRYASHEV, D. I., SMIRNOV, A. A., MEN'SHIKH, N. I.

"Approximate Solution of Problems on Heat Exchange and Drag in the Case of Flow Around a Sphere at Reynolds Numbers of $1 < Re < 100$ "

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, vyp. 35, pp 28-41 (from REh-Mekhanika, No 9, Sep 72, Abstract No 9E906)

Translation: Approximate formulation of the problem is based on introducing regions of hydrodynamic and thermal influence. By this is meant regions of finite size in which the normal component of velocity is taken as equal to zero, potential flow takes place on the outer boundary of the first region, and the temperature on the boundary of the second region is equal to that of the oncoming flow. With additional assumptions, the problem breaks down into two independent problems: dynamic and thermal, which are solved approximately on the basis of integral relations of momenta and energy. As a result, analytical formulas are derived for calculating the overall coefficient of friction drag, the overall Nusselt number, and the average surface temperature of the sphere. Bibliography of 16 titles.
V. A. Bashkin.

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USSR

UDC: 536.21+621.375.826

BELOSTOTSKIY, B. R., KUDRYASHEV, L. I., MEN'SHIKH, I. L.

"Nonlinear Problems in Cooling Strongly Anisotropic Optical Elements of Lasers"

Moscow, Kvantovaya Elektronika, Sbornik Statoy, No 2(8), 1972, pp 23-29

Abstract: An approximate method is developed for linearizing the system of differential equations which describes temperature distribution in strongly anisotropic elements of a laser optical system. The procedure can be used to evaluate the temperature state of an optical element of any configuration. Optical elements in the shape of a cylinder of finite length are considered by way of example. Bibliography of 9 titles.

1/1

Turbine and Engine Design

USSR

UDC 539.4:629.7.02

KUDRYASHEV, L. N.

"Engineering Calculations and Profile Design of Turbomachine Discs for Given Load Carrying Capacity"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 60-74

Abstract: The load carrying capacity of a turbomachine disc is defined as the speed at which the disc bursts or at which the yielding occurs. The safety factor is the ratio of the above speed to the design speed.

Formulae are given for failure along a meridional plane and along a cylindrical surface.

Assuming a constant safety factor at all radii, the thickness of the disc as a function of radius is derived.

It is pointed out that disc failures usually occur after the disc geometry changed appreciably due to plastic deformations or due to loss of elastic stability.

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USSR

K UDC 621.396.6-181.5

DROBYSHEV, Ye. P., DOL'NIKOV, S. S., KUDRYASOV, A. G.

"Improving the Reliability of Mounting Silicon Microcircuits"

Elektron. prom-st'. Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 100-102 (from REN-Radiotekhnika, No 10, Oct 70, Abstract No 10V170)

Translation: The authors discuss the basic factors which determine the reliability of contacts produced by means of interlayers of low-temperature alloys, specifically Au-Ge and Au-Si eutectics made by electrochemical gold-plating of germanium and silicon crystals. The requirements for the interlayers and coatings of the mounting areas of the housing are discussed. Three illustrations, bibliography of two titles. N. S.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF SLIME WATERS AND WATER FROM THE WASHING OF AN OXIDATE DURING
THE TREATMENT OF ACID WATERS FROM SYNTHETIC FATTY ACID PRODUCTION -U-
AUTHOR--(04)--BOCHKAREV, YU.A., MAKAROV, S.V., KUDRYASHOV, A.I., RYABYKH,
L.N.
CCUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 16-17

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, CHEMISTRY

TOPIC TAGS--SLIME, WASTE WATER CONVERSION, WATER, FATTY ACID, CHEMICAL
SEPARATION, AIR PURIFICATION EQUIPMENT, WATER RECOVERY, ORGANIC ACID

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1063

STEP NO--UR/0064/70/046/001/0016/0017

CIRC ACCESSION NO--APG124720

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124720
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIOUS SLIME AND WASHING
WATERS FROM THE MANUFG. OF SYNTHETIC FATTY ACIDS CONTAIN 2.3-12.8PERCENT
NONVOLATILE SUBSTANCES; THESE SUBSTANCES ARE SEPD. AS A RESIDUE BY
HEATING TO 130-40DEGREES UNDER 2-8 ATM. THE PRODUCT CONSISTS OF A MIXT.
OF FREE ACIDS, LACTONES, LACTIDES, AND NA, K, FE, AND MN SALTS OF ORG.
ACIDS. AFTER SEPN. OF THE RESIDUE, THE WATER MAY BE USED FOR THE
WASHING OF INCOMING AIR AND FOR THE RECOVERY OF VOLATILE ORG. ACIDS.

UNCLASSIFIED

USSR

UDC: 531.862

RUSINOV, M. M., IVANOV, P. D., POPOV, L. Ye., LIVSHITS, E. M., GOL'DBERG, G. R., KUDRYASHOV, A. M., Leningrad Institute of Precision Mechanics and Optics

"A Sighting Tube for Observing Objects in an Aqueous Medium"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328410, Division G, filed 16 Sep 70, published 2 Feb 72, p 143

Translation: This Author's Certificate introduces: 1. A sighting tube for observing objects in an aqueous medium which contains two objective lenses with protective glasses, collective lenses and erecting systems. The tube also contains a commutating flip mirror and an ocular. As a distinguishing feature of the patent, the tube is designed for simultaneous use of the visual optical system and photography of the field of view of the objective lenses. Placed directly in front of the photosensitive film is a three-component system of single positive menisci with concavity facing the object. The three-component system is introduced into the beam path by an auxiliary beam-splitting flip mirror. 2. A

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SINOV, H. M. et al., USSR Author's Certificate No 328410

modification of this tube distinguished by the fact that provision is made for compensating for rotation of the image and correcting for chromatic aberrations. Placed in front of the ocular is a PK-C" prism and a plane-parallel plate with chromatic radius.

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1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INVERSE CORRELATION BETWEEN THE FUNCTIONAL ACTIVITY OF AN
ANTICOAGULATING SYSTEM AND THE DEVELOPMENT OF A NEOPLASM IN THE ORGANISM
AUTHOR--(03)-KUDRYASHOV, B.A., KALISHEVSKAYA, T.M., KOLOMINA, S.M.

COUNTRY OF INFO--USSR *K*

SOURCE--VESTN. MOSK. UNIV., BIOL., POCHVOVED. 1970, 25(2), 16-43

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEOPLASM, BLOOD COAGULATION, FIBRINOLYSIS, ANTICOAGULANT DRUG,
RAT, MOUSE, NERVOUS SYSTEM DRUG, CHLORPROMAZINE, HEPARIN, DOG,
CARCINOMA, REPRODUCTIVE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605008/D09 STEP NO--UR/0444/70/024/002/0016/0043

CIRC ACCESSION NO--AP0139983

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS THE GROWTH OF NEOPLASMS APPEARS TO BE ACCOMPANIED BY A STIMULATION OF THE BLOOD CLOTTING MECHANISM, THE EFFECTS OF ANTICOAGULANTS AND FIBRINOLYTIC AGENTS ON TUMOR BEARING RATS AND MICE WERE INVESTIGATED. BLOOD ANAL. SHOWED A 3-4 FOLD INCREASE IN FIBRINOGEN CONTENT, A DECREASE IN FIBRINOLYTIC ACTIVITY (0-2PERCENT VS. 10-12PERCENT IN CONTROLS), AND A SHORTENED CLOTTING TIME. TREATMENT OF TUMOR BEARING MICE WITH HEPARIN OR FIBRINOLYSIN, ALONE OR IN COMBINATION, DID NOT PRODUCE A CONSISTENT REDN. IN TUMOR GROWTH, ACTUALLY PROMOTING GROWTH IN SEVERAL ANIMALS. HOWEVER, BLOCKING OF THE VEGETATIVE NERVOUS SYSTEM WITH CHLORPROMAZINE DURING ANTICOAGULANT AND FIBRINOLYTIC TREATMENT LED TO A SIGNIFICANT REGRESSION OF TUMORS. THUS, DAILY ADMINISTRATION OF 2000 UNITS HEPARIN-KG AND 8000 UNITS FIBRINOLYSIN*KG AFTER TUMOR TRANSPLANTATION PRODUCED AT 51-96PERCENT DEPRESSION OF TUMOR GROWTH IF THIS TREATMENT WAS SUPPLEMENTED BY THE ADMINISTRATION OF CHLORPROMAZINE. A SIGNIFICANT DECREASE IN METASTASES WAS ALSO OBSD. CHLORPROMAZINE ADMINISTERED ALONE PRODUCED A LOWER AND LESS CONSISTENT REGRESSION OF TUMORS. HISTOPATHOL. STUDIES CONFIRMED THE BENEFICIAL EFFECT OF THE COMBINED ANTICOAGULANT CHLORPROMAZINE TREATMENT. THIS DRUG COMBINATION WAS APPLIED WITH SUCCESS TO THE TREATMENT OF A DOG WITH SPONTANEOUS ADENOCARCINOMA OF THE MAMMARY GLANDS.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ON THE NATURE OF LYTIC EFFECT OF FIBRINOGEN HEPARIN AND TYROXIN
HEPARIN COMPLEXES ON FIBRIN -U-
AUTHOR--KUDRYASHOV, B.A., LYAPINA, L.A., MOLCHANOVA, L.V., RUSTAMOVA, B.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 161-168

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FIBRINOGEN, HEPARIN, THYROXINE, FIBRIN, FIBRINOLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FNAME--1986/0794

STEP NO--UR/0301/70/014/000/0141/0148

CIRC ACCESSION NO--AP0102757

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX TYROXIN HEPARIN (TYRH) POSSESSING BOTH IN VIVO AND IN VITRO BY ANTITHROMBIN AND LYTIC ACTION ON FIBRIN IN MODEL SYSTEM WAS OBTAINED. FIBRINOLYTIC ACTIVITY OF THE COMPLEX IS PRESERVED IN THE PRESENCE OF EPSILON AMINOCAPROIC ACID OR ANTIPLASMIN. THE COMPARATIVE STUDY OF TYRH AND FIBRINOGEN HEPARIN (FH) COMPLEXES SHOWED THE IDENTITY OF THEIR ANTITHROMBIN AND LYTIC ACTION. IT WAS ESTABLISHED THAT THESE COMPLEXES DO NOT POSSESS BY THE TRUE FIBRINOLYTIC ACTIVITY AND ACT AS SOLVENTS OF ONLY UNSTABILIZED FIBRIN. INASMUCH AS TYRH COMPLEX DOES NOT CONTAIN PROTEIN IN THE STRUCTURE, ITS LYTIC ACTIVITY IS NOT OF THE ENZYMATIC NATURE. TYRH AND FH COMPLEXES CAN BE CHARACTERIZED AS "PHYSIOLOGICAL SOLVENTS" OF UNSTABILIZED FIBRIN. THE MAXIMAL ACTIVITY OF THE COMPLEXES IS OBSERVED DURING THEIR INCORPORATION INTO THE CLOT OF FIBRINPOLYMER. FH COMPLEX ALSO POSSESS BY THE INHIBITORY ACTION ON THE PROCESS OF FIBRIN STABILIZATION BY XIII FACTOR. IT WAS PUBLISHED EARLIER THAT FH COMPLEX ARISES IN THE BLOOD AS THE DEFENCE REACTION OF THE ORGANISM ON I. V. THROMBIN ADMINISTRATION. THEREFORE THE "PHYSIOLOGICAL SOLVENTS" OF UNSTABILIZED FIBRIN ARE THE NATURAL HUMORAL AGENTS OF ANTICOAGULATING SYSTEM.

UNCLASSIFIED

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AUTHOR--(03)-RUSTANOVA, B.A., MOLCHANOVA, L.V., KUDRYASHOV, B.A.
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ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. HEPARINE EFFECT ON STABILIZATION OF CLOTS OBTAINED BY MEANS OF FIBRIN MONOMER POLYMERIZATION HAS BEEN STUDIED. HEPARINE AT APPROPRIATE CONCENTRATIONS EXERTS STABILIZING ACTION ON PRE FORMED CLOT. IN THIS CASE AS WELL AS AFTER STABILIZATION OF FIBRIN BY FACTOR XIII THE CLOT LOST THE ABILITY OF DISSOLVING MONOCHLOROACETIC ACID. BUT, THE CLOT WAS MORE LIABLE TO FIBRINOLYSIS AFTER HEPARINE ACTION AS STABILIZATION BY FACTOR XIII LEADS TO THE INCREASE OF RESISTANCE OF CLOT TO FIBRINOLYSIS ACTION. SUCCESSIVE ACTION OF PURE FIBRIN, HEPARINE AND FACTOR XIII ON THE CLOT LEADS TO THE TRUE STABILIZATION OF CLOT, I. E. TO THE INCREASE ITS RESISTANCE TO FIBRINOLYSIS ACTION. HENCE THE "STABILIZATION" BY HEPARINE AND STABILIZATION BY FACTOR XIII GO INDEPENDENTLY AND HAVE DIFFERENT BIOLOGICAL NATURE AND PHYSIOLOGICAL SIGNIFICANCE. FACILITY: LABORATORY OF PHISIOLOGY AND BIOCHEMISTRY OF BLOOD COAGULATION, STATE UNIVERSITY, MOSCOW.

UNCLASSIFIED

USSR

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"Formation of Noradrenalin-Heparin and Adrenalin-Heparin Complexes in the
Blood of Young People Under Emotional and Intellectual Stress"

Moscow, Voprosy Meditsinskoy Khimii, Vol 17, No4, 1972, pp 385-390

Abstract: The dynamics of adrenalin-heparin (ADH) and noradrenalin-heparin (NDH) complexes and free adrenalin and noradrenalin were traced over 1 school year in different groups of students experiencing different levels of emotional and mental stress. At the end of the winter session, students taking examinations had high ADH levels in their blood. Students that returned to normal studies had no ADH but higher levels of NDH. On the other hand, students preparing for spring examinations had no ADH or NDH but higher levels of free adrenalin and noradrenalin by the spring examination period, possibly due to inadequate levels of heparin. Thromboelastograms of the blood of such students indicated heightened tolerance of plasma to heparin and inhibition of the anti-coagulation system. It is concluded that prolonged emotional and mental stress

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KUDRYASHOV, B. A., et al., Voprosy Meditsinskoy Khimii, Vol 17, No 4, 1972, pp 385-390

causes blood hypercoagulation, which disrupts complex formation between adrenalin and noradrenalin, and heparin, which in turn impairs the metabolism of these biogenic amines.

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USSR

UDC 612.115-06;1577.161.11+577.161.4+613.2

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"Significance of a Relative Excess of Vitamin A and Unsaturated Fatty Acids in
the Formation of Complex Heparin Compounds in Stressed Animals Kept on Natural
and Atherogenic Diets"

Moscow, Voprosy Pitaniya, No 1, 1973, pp 23-29

Abstract: Administration of linethol (a mixture of ethyl esters of unsaturated fatty acids, especially linoleic and linolenic acids, contained in linseed oil) and excessive amounts of vitamin A to rats kept on natural and atherogenic diets stimulated the complexing of heparin with fibrinogen and plasminogen after the induction of stress by ringing a loud bell for 1 1/2 minutes. An epinephrine-heparin complex was also produced in the animals that received the atherogenic rations; the amount was greater than in the control, but less than in healthy animals. Intravenous injection of the experimental animals with thrombin completely prevented death from thrombosis (100% survival rate) compared to a 33% mortality rate among the controls that did not receive linethol.

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USSR

PAVLOV, V. A., VANYUKOV, S. A., and KUDRYASHOV, G. N.

"The Influence of Aerodynamic Drag Forces on Gyroscope Drift in the Event of Skewness of the Principal Axis"

Tr. Leningr. in-t aviats. priborost. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp. 66, pp 170-173 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1A87 by S. S. Rivkin)

Translation: The article presents results of an experimental verification of the appearance of systematic drift of a two-degree-of-freedom astatic gyroscope around the outer axis of suspension, caused by aerodynamic drag forces in the event of a skewed principal axis. An expression is given for the moment of aerodynamic drag forces appearing during rotation of the rotor, and its physical nature is ascertained. It is shown that the component of this moment along the axis of rotation of the inner gimbal ring, which appears if the principal axis of the gyroscope is skewed, gives rise to azimuthal gyroscope drift. An expression is given for the angular velocity of this drift. A description is given of the mock-up for laboratory verification of the gyroscope drift. An account is given of the nature

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PAVLOV, V. A., et al., Tr. Leningr. in-t aviats. priborost. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp. 66, pp 170-173 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1A87 by S. S. Rivkin)

of the procedure for conducting the experiment. Results of experimental verification and calculation of the angular velocity of gyroscope drift are given in a table. A graph of calculated and measured gyroscope drift values is plotted according to the data of this table. It is shown that experimental results agree rather well with calculated data.

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USSR

UDC 541.13

KUDRYASHOV, I. V., KAMYSHCHENKO, S. D., and MAKARYAN, E. M., Moscow Chemical-Technological Institute Imeni D. I. Mendeleev

"Study of the Kinetics of Cathodic Evolution of Hydrogen Over Tungsten Monocrystals With Indexes (100), (110), (111)"

Moscow, Elektrokimiya, Vol 9, No 4, Apr 73, pp 478-480

Abstract: The kinetics and mechanism of hydrogen evolution from a cathode depend on the surface properties of the electrode metal. An attempt was made to find out the effect of the orientation of tungsten monocrystal and of the state of crystal surface on the overcharge of hydrogen evolution. The monocrystals and polycrystals were polished either mechanically or electrochemically. Mechanically polished crystals showed no difference in kinetic parameters; the specificity of their surface being probably destroyed by mechanical polishing. On the electropolished electrodes the overcharge was about 0.2 V higher than on the mechanically treated ones. Electropolished material showed differences in the kinetic parameters α and β in the following order: $(110) > (100) > (\text{polycrystal}) > (111)$.

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USSR

UDC 541.15:547.455

KOCHETKOV, N. K., KUDRYASHOV, L. I., GILENOV, M. A., and GRINEVA, L. P.,
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Zelinskiy

"Radiolysis of Aqueous Solutions of Some Organic Monophosphates"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2071-2076

Abstract: A study was conducted on the radiation-induced chemical conversion of a number of organic monophosphates. Cyclohexyl monophosphate and glucose monophosphate containing the phosphate group in 1 and 6 positions were selected for the study. Determinations were made of the decomposition yields of the dipotassium salt of α -D-glucose-1 phosphate (G-1-P) and disodium salt of D-glucose-6 phosphate (G-6-P) as well as of the yields of inorganic phosphate on radiolysis of these salts and cyclohexyl phosphate disodium salt. The OH radical appears to play the dominant role in the process of radiation dephosphorylation. The formation of inorganic phosphorus is not followed by the formation of glucose. The evaluation of the total amount of neutral sugars in the case of both sugar phosphates has shown that the yields correlate well with those of inorganic phosphate. The yield of reducing-type sugars was reduced to one half and equaled 1.0 and 0.5 for dipotassium salt 1/2